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10/722,229	11/25/2003	Helena D. O'Shea	010535B1	6695

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QUALCOMM INCORPORATED
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EXAMINER	
WILLIAMS, LAWRENCE B	
ART UNIT	**PAPER NUMBER**
2611	

NOTIFICATION DATE	DELIVERY MODE
07/27/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/722,229	O'SHEA, HELENA D.	
	Examiner	Art Unit	
	Lawrence B. Williams	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-42* is/are rejected.

7)☒ Claim(s) *11,31,40 and 42* is/are objected to.

8)☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on *09 May 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Remarks, filed 09 May 2007, with respect to the specification and 112 rejections have been fully considered and are persuasive. The previous objections and 112 rejections of the specification and claims 1-10, respectively has been withdrawn.

Drawings

2. The drawings were received on 05 May 2007. These drawings are accepted by the examiner.

Specification

3. The abstract of the disclosure is objected to because applicant uses form and legal phraseology (i.e., said demodulator) in line 2. Correction is required. See MPEP § 608.01(b). The examiner is aware of applicant's Amendment To the Specifications. However, page 3, line 3, cites "on page 8, replace paragraph [0017]". The original specification as filed does not contain a paragraph [0017].

Claim Objections

4. Claim 11 is objected to because of the following informalities: The examiner suggests applicant replace "wherein DC averager" with "wherein the DC averager" in line 1 of the claim. Appropriate correction is required.

5. Claim 31 is objected to because of the following informalities: The examiner suggests applicant replace "form" with "from" in line 7 of the claim. Appropriate correction is required.

6. Claim 40 is objected to because of the following informalities: Claim 40 recites the limitation "converting the plurality of symbol bits" in line 5. There is insufficient antecedent basis for this limitation in the claim. The examiner suggests, "converting the plurality of symbol bits".

Appropriate correction is required.

7. Claim 42 is objected to because of the following informalities: The examiner suggests applicant replace "time-average from" with "time-average DC component" in lines 5 and 6 of the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claim 30 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 30 discloses the limitation, "the output of the DC averager being selected based on a mode of operation of the device". The specification offers no support for this limitation.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

11. Claim 43 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 43 recites "transmitting the subtracted I component and the subtracted Q component". This language is misleading as the time-average DC components, not the I and Q components have not been subtracted. The examiner suggests applicant rewrite the claim to particularly point out and distinctly claim the subject matter regarded as the invention.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Boccuzzi (US Patent 5,550,868).

(1) With regard to claim 18, Boccuzzi discloses in Fig(s) 1, 3, a method for compensating DC offsets in a receiver (Fig. 1, 150) of a wireless communications system (col. 2, lines 26-27), comprising; receiving a demodulator (Fig. 1, 151) output signal having a DC offset (col. 6, lines

46-51); determining a time-average of the DC offset over a predetermined period of time from at least one at least one of a successive average of the estimate values, the average calculated periodically over successive predetermined time intervals, or a running average of the estimate values, the average calculated over a predetermined number of estimate values (col. 6, line 65-col. 7, line 20); and subtracting (Fig. 3, 312) the time-averaged DC component from the demodulator output signal to obtain a resultant signal (col. 7, lines 1-2); and transmitting the resultant signal to a symbol decoder (col. 4, lines 49-59).

(2) With regard to claim 19, Boccuzzi also discloses in Fig. 2, the method of claim 18 wherein said receiving a demodulator (151) output signal comprises receiving an in-phase (I) output and a quadrature-phase (Q) output of a demodulator.

(3) With regard to claim 20, Boccuzzi also discloses the method of claim 18 wherein said determining a time-average of the DC offset comprises low-pass filtering (Fig. 3, EQ1) the demodulator output signal; estimating a DC component in the filtered signal and averaging the estimated DC component over the predetermined period of time (col. 7, lines 9-20).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. Claims 10-17, 21-22, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boccuzzi (US Patent 5,550,868).

(1) With regard to claim 10, Boccuzzi discloses in Fig(s) 1, 3, a receiver (Fig. 1, 150) to operate in a wireless communications system (col. 2, lines 26-27), comprising: a demodulator (Fig. 1, 151) to output a signal having a DC component (col. 6, lines 46-51); a DC estimator (Fig. 3, 311) to generate estimate values of the DC component in response to the demodulator output signal; a DC averager (Fig. 3, 311) to generate a time-averaged DC component from at least one of a successive average of the estimate values, the average calculated periodically over successive predetermined time intervals, or a running average of the estimate values, the average calculated over a predetermined number of estimate values (col. 6, line 67 - col. 7, line 20); Though Boccuzzi does not discloses separate units, Boccuzzi's moving average unit functions as applicant's DC estimator and DC averager, since Boccuzzi discloses obtaining the estimated DC offset in the moving average unit, 211 by using an moving average filter (col. 7, lines 9-11; It is well known in the art that the moving average filter operates with an algorithm that accomplishes a moving average by taking two or more points from the acquired waveform, adding them, dividing their sum by the total number of data points added, replacing the first data point of the waveform with the average just computed (generating estimate values), and repeating the steps with the second, third, and so on data points until the end of the data is reached (received time slot/window which corresponds to applicant's predetermined time interval, and measuring the average in the window corresponding to applicant's DC averager); and a subtractor (Fig. 3, 312) to subtract the time-averaged DC component from the demodulator output signal (col. 7, lines 1-2).

(2) With regard to claim 11, Boccuzzi also discloses the receiver of claim 10, wherein the DC averager selects one of the successive average or the running average (col. 7, lines 9-11).

(3) With regard to claim 12, Boccuzzi also discloses in Fig. 3, the receiver of claim 10 further comprising a low pass filter (EQ1) to condition the demodulator output signal before transmission to the DC estimator.

(4) With regard to claim 13, Boccuzzi also discloses in Fig. 3, the receiver of claim 10 wherein the demodulator output comprises an in-phase output (I) and a quadrature-phase output (Q).

(5) With regard to claim 14, Boccuzzi also discloses in Fig(s). 1, 3, the receiver of claim 10 wherein said subtractor unit (312) is coupled to a symbol decoder (col. 4, lines 49-59).

(6) With regard to claims 15, 16, 17, the steps claimed as a method is nothing more than restating the function of the specific components of the apparatus as claimed above in claims 10, 11, 13, respectively. Therefore a similar rejection applies.

(7) With regard to claim 21, Boccuzzi discloses in Fig(s) 1, 3, a device (Fig. 1, receiver, 150) capable of use in a communications system, the device comprising; a DC estimator (Fig. 3, 311) receive an input signal (I) and to generate corresponding estimate values of an instantaneous DC level; a DC averager (Fig. 3, 311) to generate a time-averaged DC component from at least one of a successive average of the estimate values, the average calculated periodically over successive predetermined time intervals, or a running average of the estimate values, the average calculated over a predetermined number of estimate values (col. 7, lines 9-20); Though Boccuzzi does not disclose separate units, Boccuzzi's moving average unit functions as applicant's DC estimator and DC averager, since Boccuzzi discloses obtaining the

estimated DC offset in the moving average unit, 211 by using an moving average filter (col. 7, lines 9-11; It is well known in the art that the moving average filter operates with an algorithm that accomplishes a moving average by taking two or more points from the acquired waveform, adding them, dividing their sum by the total number of data points added, replacing the first data point of the waveform with the average just computed (generating estimate values), and repeating the steps with the second, third, and so on data points until the end of the data is reached (received time slot/window which corresponds to applicant's predetermined time interval, and measuring the average in the window which corresponds to applicant's DC averager); and a subtractor (Fig. 3, 312) to remove the time-averaged DC component from the input signal (col. 7, lines 1-2).

(8) With regard to claim 22, Boccuzzi also discloses the device according to claim 21, further comprising: a demodulator (Fig. 1, element 154) to receive a modulated composite signal and output a demodulated signal, the input signal (Fig. 3, I) being derived from the demodulated signal.

(9) With regard to claim 31, claim 31 inherits all limitations of claim 21. As noted above, the combination of Boccuzzi and Jakobsson disclose all limitations of claim 21. Furthermore, Boccuzzi also discloses in Fig. 3, the device according to claim 21, said demodulator having an in-phase (I) output and a quadrature-phase (Q) output, and said subtracter unit having an in-phase (I) subtracter (311) to subtract a DC component from the in-phase (I) output of the demodulator and wherein the output from the (I) subtracter and the Q output from the demodulator are input into the symbol decoder to produce the plurality of symbol bits (col. 4, lines 49-59).

Boccuzzi does not teach a (Q) subtracter. However, Jakobsson teaches in Fig(s). 1 and 2, DC correction circuitry for both the (I) and (Q) output.

It would have been obvious to one skilled in the art at the time of invention to incorporate a subtracter to subtract a DC component from the (Q) output to increase the accuracy of the DC compensation thereby realizing increased accuracy in the symbol decoding.

16. Claims 23-25, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boccuzzi (US Patent 5,550,868) as applied to claim 22 above, and further in view of Jakobsson (US 6,757,340 B1).

(1) With regard to claim 23, claim 23 inherits all limitations of claim 22, above. As noted above, Boccuzzi discloses substantially all limitations of claim 22. Furthermore, Boccuzzi discloses a symbol decoder to receive a demodulated component output from the subtractor unit (Fig. 3, 312) and output a corresponding plurality of symbol bits (col. 4, lines 49-59).

Boccuzzi does not disclose the device according to claim 22, further comprising: an automatic gain correction unit to receive an uncorrected modulated composite signal, provide gain correction, and output a corresponding gain corrected modulated composite signal to the demodulator.

However, Jakobsson discloses a method for DC offset compensation wherein he teaches in Fig. 2, an automatic gain correction unit (216) to receive an uncorrected modulated composite signal, provide gain correction, and output a corresponding gain corrected modulated composite signal to the demodulator (220, 222, 233, 224).

It would have been obvious to one skilled in the art at the time of invention to incorporate the automatic gain control to insure adequate signal strength before demodulation.

(2) With regard to claim 24, Jakobsson also discloses in Fig. 2, the device according to claim 23, further comprising a low pass filter (230) to receive the demodulated signal, the output of the low pass filter being the signal derived from the demodulated signal.

It would have been obvious to one skilled in the art at the time of invention to incorporate the teachings of Jakobsson to reduce noise bandwidth and filter erroneous samples associated with the demodulated signal.

(3) With regard to claim 25, claim 25 inherits all limitations of claim 23. As noted above the combination of Boccuzzi and Jakobsson disclose all limitations of claim 23. Furthermore, Boccuzzi also teaches wherein the device is a handset in a wireless communication system (col. 2, lines 26-27) and a converter unit to convert the plurality of symbol bits output from the symbol decoder into a corresponding analog signal; and a transducer (audio speaker) for converting the analog signal from the converter unit into an acoustic signal (col. 4, lines 49-59).

Boccuzzi does not disclose an antenna to communicate a wireless signal to the automatic gain correction unit.

However, Jakobsson discloses an antenna (Fig. 2, 202) to communicate a wireless signal to the automatic gain correction unit (216).

It would have been obvious to one skilled in the art at the time of invention to incorporate the antenna to receive the RF signals before gain correction.

(4) With regard to claim 29 Boccuzzi also discloses wherein the uncorrected modulated composite signal is a quadrature phase shift keying signal (col. 1, lines 43-44).

17. Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boccuzzi (US Patent 5,550,868) in view of Jakobsson (US 6,757,340 B1) as applied to claim 23 above, and further in view of Shi (US Patent 6,980,774 B2).

(1) With regard to claim 26, claim 26 discloses the limitations of claim 25 in an integrated circuit. As noted above the combination of Boccuzzi and Jakobsson disclose all limitations of claim 23 and 25. They do not however teach wherein the device is an integrated circuit adapted for use in a handset.

However, Shi teaches a radio frequency integrated circuit adapted for use in a handset (Fig. 1, element 22, col. 5, lines 52-55).

It would have been obvious to one skilled in the art to incorporate the device in an integrated circuit reduce cost and size of the device.

(2) With regard to claim 27, Boccuzzi also disclose in Fig. 1, wherein the communications system comprises a transmitter (110) to transmit the wireless signal to the antenna (col. 4, lines 31-32).

(3) With regard to claim 28, claim 28 inherits all limitations of claim 23. As noted above the combination of Boccuzzi and Jakobsson disclose all limitations of claim 23. They do not teach wherein the device is a programmable microprocessor running executable code.

However, Shi teaches that a transmitter/receiver module implemented as a programmable microprocessor running executable code (col. 7, line 53- col. 8, line 10).

It would have been obvious to one skilled in the art to implement the device as a programmable microprocessor running executable code to reduce size and cost and increase reliability of the device.

18. Claims 32-35, 37-38, 40, 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boccuzzi (US Patent 5,550,868) in view of Jakobsson (US 6,757,340 B1).

(1) With regard to claim 32, Boccuzzi discloses in Fig(s) 1, 3, a device (Fig. 1, receiver, 150) capable of use in a communications system, the device comprising; a DC estimator (Fig. 3, 311) receive a signal (I) and generate estimate values of the signal's instantaneous DC level; a DC averager (Fig. 3, 311) configured to generate a time-averaged DC component from at least one of a successive average of the estimate values, the average calculated periodically over successive predetermined time intervals, or a running average of the estimate values, the average calculated over a predetermined number of estimate values (col. 7, lines 9-20); Though Boccuzzi does not disclose separate units, Boccuzzi's moving average unit functions as applicant's DC estimator and DC averager, since Boccuzzi discloses obtaining the estimated DC offset in the moving average unit, 211 by using an moving average filter (col. 7, lines 9-11; It is well known in the art that the moving average filter operates with an algorithm that accomplishes a moving average by taking two or more points from the acquired waveform, adding them, dividing their sum by the total number of data points added, replacing the first data point of the waveform with the average just computed (generating estimate values), and repeating the steps with the second, third, and so on data points until the end of the data is reached (received time slot/window which corresponds to applicant's predetermined time interval, and measuring the average in the

window which corresponds to applicant's DC averager); and a subtractor (Fig. 3, 312) to receive the signal and to remove a remove a time-averaged DC component thereform, the averaged DC component derived from the output of the DC averager (col. 6, line 67-col. 7, line 20).

Boccuzzi does not teach an automatic gain correction unit for gain correction of the signal prior to DC estimation and averaging.

However, Jakobsson discloses a method for DC offset compensation wherein he teaches in Fig. 2, an automatic gain correction unit (216) to receive a signal, provide gain correction, and output a corresponding gain corrected signal prior to DC offset compensation.

It would have been obvious to one skilled in the art at the time of invention to incorporate the automatic gain control to insure adequate signal strength prior to DC compensation.

(2) With regard to claim 33, Boccuzzi also discloses in Fig(s). 1, 3, the device according to claim 32, further comprising: a symbol decoder to receive the signal output from the subtracter unit and output a plurality of symbol bits corresponding to the received signal (col. 4, lines 49-59).

(3) With regard to claim 34, Jakobsson also discloses the device according to claim 33, further comprising a low pass filter (Fig. 2, 230) to receive the gain corrected signal from the automatic gain correction unit (216) and output a corresponding low pass signal component, the output of the low pass filter being the signal derived from the gain corrected signal.

It would have been obvious to one skilled in the art at the time of invention to incorporate the teachings of Jakobsson to reduce noise bandwidth and filter erroneous samples associated with the gain corrected signal.

(4) With regard to claim 35, claim 35 inherits all limitations of claim 33. As noted above the combination of Boccuzzi and Jakobsson disclose all limitations of claim 33. Furthermore, Boccuzzi also teaches wherein the device is a handset in a wireless communication system (col. 2, lines 26-27) and a converter unit to convert the plurality of symbol bits output from the symbol decoder into a corresponding analog signal; and a transducer (audio speaker) for converting the analog signal from the converter unit into an acoustic signal (col. 4, lines 49-59).

Boccuzzi does not disclose an antenna to communicate a wireless signal to the automatic gain correction unit.

However, Jakobsson discloses an antenna (Fig. 2, 202) to communicate a wireless signal to the automatic gain correction unit (216).

It would have been obvious to one skilled in the art at the time of invention to incorporate the antenna to receive the RF signals before gain correction.

(5) With regard to claim 37, Jakobsson also discloses in Fig. 2, wherein the signal received by the automatic gain correction unit is a modulated signal.

(6) With regard to claim 38, Boccuzzi discloses in Fig(s) 1, 3, a device to execute a method, said method comprising; generating DC estimates of a signal's instantaneous DC level; generating a time-average DC component from at least one of a successive average of the estimate values, the average calculated periodically over successive predetermined time intervals, or a running average of the estimate values, the average calculated over a

predetermined number of estimate values (col. 6, line 65 - col. 7, line 20); and subtracting (Fig. 3, 312) the time-averaged DC component from the communication signal to obtain a resultant signal (col. 7, lines 1-2); and transmitting the resultant signal to a symbol decoder (col. 4, lines 49-59).

Boccuzzi does not disclose the method comprising receiving a gain corrected signal before the DC offset compensation.

However, Jakobsson discloses a method for DC offset compensation wherein he teaches in Fig. 2, receiving a gain corrected (216) signal prior to DC offset compensation.

It would have been obvious to one skilled in the art at the time of invention to incorporate the automatic gain control to insure adequate signal strength before DC offset compensation.

(7) With regard to claim 39, Jakobsson also discloses in Fig. 2, the device of claim 38, said method further comprising passing the gain (216) corrected communication signal through a low pass filter (230) to obtain a low pass signal.

It would have been obvious to one skilled in the art at the time of invention to incorporate the teachings of Jakobsson to reduce noise bandwidth and filter erroneous samples associated with the gain corrected signal.

(8) With regard to claim 40, claim 40 inherits all limitations of claim 38. As noted above the combination of Boccuzzi and Jakobsson disclose all limitations of claim 38. Furthermore, Boccuzzi also teaches wherein the device is a handset in a wireless communication system (col. 2, lines 26-27) and converting the plurality of symbol bits output from the symbol decoder into a corresponding analog signal; and a transducer (audio speaker) for converting the analog signal from the converter unit into an acoustic signal (col. 4, lines 49-59).

Boccuzzi does not disclose changing an uncorrected modulated communication signal received by an antenna into the gain corrected antenna.

However, Jakobsson discloses changing an uncorrected modulated communication received by an antenna (Fig. 2, 202) into the gain corrected (216) communication signal.

It would have been obvious to one skilled in the art at the time of invention to incorporate the antenna to receive the RF signals before gain correction.

(9) With regard to claim 42, claim 42 inherits all limitations of claim 38. As noted above, the combination of Boccuzzi and Jakobsson disclose all limitations of claim 38. Furthermore, Boccuzzi also discloses wherein the communication signal is a quadrature phase shift keying signal (col. 1, lines 43-44), separating communication signal into and I and Q component (Fig(s). 1, 3); said subtracting step comprises subtracting the time-average for the I component and said transmitting step comprises transmitting the I component with time averaged DC component subtracted and the Q component to the symbol decoder as the resultant signal (Fig. 3, col. 4, lines 29-59).

Boccuzzi does not teach the subtracting step comprising subtracting the time average DC component from the Q component.

However, Jakobsson teaches in Fig(s). 1 and 2, DC correction circuitry for both the (I) and (Q) output.

It would have been obvious to one skilled in the art at the time of invention to incorporate a subtracter to subtract a DC component from the (Q) output to increase the accuracy of the DC compensation thereby realizing increased accuracy in the symbol decoding.

19. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boccuzzi (US Patent 5,550,868) in view of Jakobsson (US 6,757,340 B1) as applied to claim 33 above, and further in view of Shi (US Patent 6,980,774 B2).

(1) With regard to claim 36, claim 36 discloses the limitations of claim 35 in an integrated circuit. As noted above the combination of Boccuzzi and Jakobsson disclose all limitations of claim 33 and 35. They do not however teach wherein the device is an integrated circuit adapted for use in a handset.

However, Shi teaches a radio frequency integrated circuit adapted for use in a handset (Fig. 1, element 22, col. 5, lines 52-55).

It would have been obvious to one skilled in the art to incorporate the device in an integrated circuit reduce cost and size of the device.

20. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boccuzzi (US Patent 5,550,868) in view of Jakobsson (US 6,757,340 B1) as applied to claim 38 above, and further in view of Shi (US Patent 6,980,774 B2).

Claim 41 inherits all limitations of claim 38. As noted above the combination of Boccuzzi and Jakobsson disclose all limitations of claim 38. Furthermore, Boccuzzi also teaches wherein the device is adapted for use in a handset (col. 2, lines 26-27) and converting the plurality of symbol bits output from the symbol decoder into a corresponding analog signal; wherein the handset includes a transducer (audio speaker) for converting the analog signal from the converter unit into an acoustic signal (col. 4, lines 49-59).

Boccuzzi does not disclose changing an uncorrected modulated communication signal received by an antenna into the gain corrected antenna.

However, Jakobsson discloses changing an uncorrected modulated communication received by an antenna (Fig. 2, 202) into the gain corrected (216) communication signal.

It would have been obvious to one skilled in the art at the time of invention to incorporate the antenna to receive the RF signals before gain correction.

Neither Boccuzzi nor Jakobsson disclose wherein the device is an integrated circuit adapted for use in a handset.

However, Shi teaches a radio frequency integrated circuit adapted for use in a handset (Fig. 1, element 22, col. 5, lines 52-55).

It would have been obvious to one skilled in the art to incorporate the device in an integrated circuit reduce cost and size of the device.

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a.) Soltanian et al. discloses in US 2003/0174079 A1 Feed-Forward DC-Offset Canceller For Direct Conversion Receiver.

b.) Bezooijen et al. discloses in US 2002/0075892 A1 DC-Offset Correction circuit Having A DC Control Loop And A DC Blocking Circuit.

c.) Allott et al. discloses in US 2002/0160738 A1 DC Offset Correction For Use In A Direct-Conversion Radio Architecture.

d.) Baldwin et al. discloses in US 6,735,422 B1 Calibrated DC Compensation System For A Wireless Communication Device Configured In A Zero Intermediate Frequency Architecture.

e.) Paulus et al. discloses in US 2003/0063690 DC Offset In Radio-Frequency Apparatus And Associated Methods.

f.) Khlat et al. discloses in US 7,212,587 B2 Apparatus For Reducing DC Offset In A Receiver.

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ghayour Mohammad can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams

lbw

July 21, 2007

MOHAMMED GHAYOUR
SUPERVISORY PATENT EXAMINER